NACE CODE C30

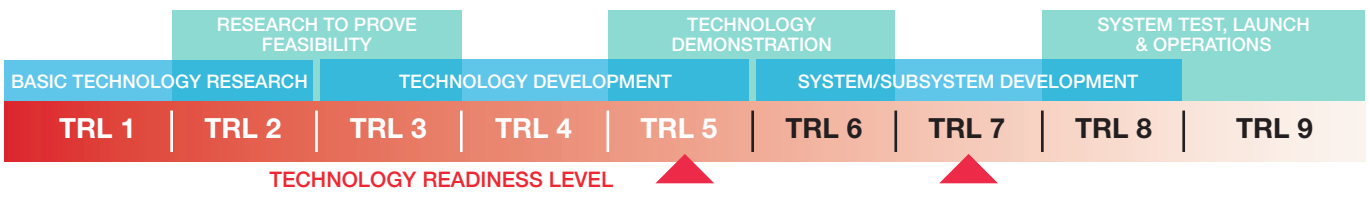
CHEMICAL VAPOUR INFILTRATION/DEPOSITION (CVI/CVD) TECHNOLOGY

Innovations and Benefits - Aeronautics and space industries require light materials with high performance in terms of thermo-mechanical properties, hardness and erosion/corrosion resistance. Ceramic materials are often the only ones that can achieve the performance required for these extreme environments, in association or replacement materials traditionally used.
CVI/CVD technology are the preferred technique for the production of high performance materials. It is a high flexible process, thanks to its ability to change the nature of the deposited materials and furthermore allows the simultaneously production of components with different geometries and near net shape.

Uses - Functional components and devices for engines, thermal protection systems, structural components, thermal barriers.
CVI/CVD technology applications:
- ceramic composites production;
- ceramic coating development;
- porous component functionalization.

Past and Present Activities - CVI/CVD pilot sized plant is set up in Faenza laboratories TEMAF.
The results of the research activities are supported by collaborations with companies in the sector, both as contracts and as joint participation in local and European projects, and by registered patents.
Projects:
- NEXTOWER - Advanced materials solutions for next generation high efficiency concentrated solar power (CSP) tower systems (H2020)
- MITGEA – Studio di materiali innovativi per turbine a gas ad elevatissima efficienza e basso impatto ambientale (MIUR)
- TURBOCER - Sviluppo di materiali ceramici per le pale statore di turbomotori aeronautici (MIUR)
- PROMOMAT - Sviluppo di processi di realizzazione e di metodi innovativi di progettazione e modellistica di materiali compositi high tech e coating ceramici (MIUR)

CVI/CVD Pilot plant



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